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LECTURES.

CLINICAL LECTURE ON EMPYEMA.¹

DELIVERED AT THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF
THE CITY OF NEW YORK.

BY PROFESSOR ALFRED L. LOOMIS.

GENTLEMEN, — I have thought it well to bring two cases before you together to-day, as it will, I believe, be interesting and instructive to study them in connection with each other. The first patient is a young man just about reaching adult life, and I will now ask him a few questions about himself.

How long have you been sick? "Since the 2d of January last." (That is, about four months.) What have you complained of? "I had pneumonia." How do you know this? "The doctor told me that I had." How were you taken at first? "Well, I was out on New Year's, and the next day I was sick in bed." Did you have a chill at first? "No." Did you have any pain? "Yes, a good deal." Where was it situated? "In the left side." Any fever? "Yes, quite a high fever, I think." Did you have any spit? "Yes." What color was it? "White." Was it ever any other color than white? "Yes, part of the time it was reddish." Was this reddish color mixed through it, or in streaks? "In streaks." How long did you continue to spit up phlegm? "About a week." Did it hurt you to lie on either side? "Yes." Which? "Both sides, and so I had to lie on my back." How long were you confined to bed? "The whole month of January." How have you been getting along since then? "Some time since I found that there was a lump in my left side. This, it seems, was a gathering, and after a while it broke." How long did the discharge of matter continue? "It has been coming ever since." Is the discharge now more or less free than it was soon after the gathering broke? "There is more coming now than there has been at any other time."

In like manner I will endeavor to get some idea of the history of the second case from the patient, who is, as you perceive, a man in middle life. How long have been sick? "Since the first of last September."

¹ Reported for the JOURNAL.

(That is, about eight months.) How were you taken? "With pain in the left side." Did you have a chill? "No." Any cough? "No." How long did the pain continue before you got relief? "Two weeks." Did you spit up any phlegm? "No." Could you lie equally well on either side? "I could sleep only on the left side." Have you lost any flesh since? "Yes, a good deal." Have you had any sweating? "Not until the present time. During the last two nights I have noticed this."

Now, having heard the above histories, what would you say was the matter in these two cases, Mr. A? "Pneumonia in the first, and pleurisy in the second." Well, let us see. The first patient now being stripped, we find that on the left side of the chest, about three inches below and a little to the left of the nipple, there is a fistulous orifice, from which there is constantly escaping a certain amount of discharge. On examining the rest of the thorax externally, we find that there is a very marked falling in under the left clavicle, and that there is an equally great, if not even more marked, retraction on the same side posteriorly in the upper portion of the chest. You will notice, furthermore, that during respiration, while the right scapula moves very freely, the left remains in a perfectly fixed position. In front, also, there is the same difference in movement between the two sides during respiration. Finally, we find that the apex-beat of the heart, instead of being in its normal situation, is almost directly under the right nipple.

What would you take to be the cause of this displacement of the heart, Mr. A? "The abscess that is here present." Where do you suppose that this abscess is situated? "In the chest walls." If you will reflect a little I think you will come to the conclusion that no abscess merely in the chest wall could possibly push the heart over to such an extent as is here the case. What do you think about it, Mr. B? "I should suppose that there had been a pleurisy complicated with pericarditis, that adhesions between the pleura and pericardium had resulted from this, and that consequently the heart had been drawn out of place." The great objection to this view of the case is that it is evidently the left side of the chest that is affected here, while the pleurisy must necessarily have been on the right side, in order that the heart should be drawn towards the right by adhesions between the pericardium and pleura. What is your opinion, Mr. C? "I believe that this is a case of empyema of the left side, and that the heart has been pushed over to the right by the presence of such a large quantity of fluid in the left pleura." This looks as if we were getting at the true solution of the matter, and we will now, therefore, continue our exploration of the chest, and see if the physical signs confirm this view of the condition here present.

In the first place, we have complete flatness on percussion. When

we place the ear to the chest we find exaggerated respiration on the right side, and at the apex of the left lung feeble vesicular murmur; while below on this side, from about the level of the third rib, there is complete absence of all respiratory sounds. Vocal fremitus and vocal resonance are also entirely wanting below this level. The diagnosis is therefore very clear. The presence of empyema is of course confirmed by this external opening through the anterior chest wall, with constant discharge of pus. This is out of the usual position for such spontaneous openings, which is considerably higher up, although they ordinarily occur in front. The heart has been pushed over to the right by the amount of fluid that has been present, and has not yet returned to its normal position. It is altogether probable, however, that the displacement is even now considerably less than it was before the distended pleura was relieved by the drainage through the opening. Since this occurred the patient states that he has improved very much.

Now let us find out what the condition is in the second patient. In comparing the two cases we are at once struck with the difference in the appearances of the patients' chests. In the first we found the most marked retraction. In the second there is evidently a very considerable enlargement of the left side. In other respects, however, there are many points of resemblance; for here on the left side, as in the other case, we get perfect flatness on percussion and entire absence of vocal fremitus, vocal resonance, and respiratory murmur. The only difference is that in this case these signs extend all the way up to the apex. As a result of the long continuance of this large accumulation of fluid in the pleura, the patient is now very weak and short of breath, and during the last two or three days has begun to suffer from severe sweating. As to the diagnosis in this case, there can be no doubt that there is subacute pleurisy; and you will seldom have a better opportunity of seeing the bulging of the intercostal spaces of which you read in the books, which is here so marked as to amount to a positive deformity. Whether empyema has as yet supervened is at present uncertain, though it seems highly probable that it has. The pulse I find is now 124, and the temperature 101° F., which I think is enough to indicate the presence of pus, although it would be more clearly demonstrated if the temperature were a couple of degrees higher. Still, this amount of increase in the pulse and temperature, taken in connection with the time that has elapsed since the pleural effusion first took place, and the fact that sweating has recently made its appearance, would seem to leave but little doubt that the fluid here present is no longer of a serous character. The apex of the heart in this case is found over by the right nipple, which is a greater amount of displacement than was met with in the other patient, although it is probable that before the opening occurred through the chest walls it was even more marked in that instance.

These are two very good cases to study together, because they show the same disease in different stages. In the first the spontaneous opening occurred very early. I do not understand exactly why this should have been the case, but I have found that such an early spontaneous evacuation is very apt to occur in the younger subjects of empyema. In this case the inflammatory process in the pleura was a rapid one; while in the second it has been much slower, and, indeed, probably sub-acute from the first. I do not suppose that it is the fluid itself that has changed here (in the second case), but rather the kind of inflammatory action in the pleura, which is now resulting in pus, instead of an effusion of serum, as at first. This second case shows the importance, therefore, of making a comparatively early opening where there is pleural effusion. The other warns us, however, that we should not interfere at too early a period, since a spontaneous opening of this kind is to be regarded as preferable to any artificial one that can be made. Here the point of opening is in a remarkably good position. The only unsatisfactory thing about it is that the aperture and passage are not quite free enough; but as there is no objection whatever to putting in a drainage tube in a case of this kind, the difficulty can be readily obviated. On the whole, the prognosis is very favorable, — decidedly more so, indeed, than in the second case.

In regard to the latter, the question now arises, Shall we make an opening in order to evacuate the contents of the pleural sac? This should certainly be done by all means, and the sooner the better. One great danger of delay in such a case as this is that sudden syncope is liable to occur at any time. The course which I would advise here would be as follows: At first to draw off by means of the aspirator as much fluid as would be well borne at one time by the patient, — perhaps about forty ounces. If the fluid were found to be serous in character, I would then rest content; but if it were purulent I would at once make a free opening in the chest wall and introduce a drainage tube. In the case of young subjects and where the affection is comparatively recent the aspirator is usually all that is required; but these older cases are not found to do well unless some more active interference than this is made. Here, if the patient still continued to run down after the drainage tube had remained in position for some little time, I should raise the question of the advisability of removing one or two ribs. This would allow the chest wall to sink in to a greater extent, and thus, meeting the slowly expanding lung, diminish the large cavity which is now present, the lower portion of which would also probably become obliterated in consequence of the operation. If the discharge from the pleural sac were offensive, it would be necessary to keep it washed out with some appropriate disinfectant by means of the drainage tube.

In young subjects the chances are four out of five that the patient

will recover when a spontaneous opening takes place, and in cases of all kinds three out of five. In the first of the cases that have now been presented to you the lung is already expanding in the upper part of the chest in as favorable manner as we could expect, and the process will be accelerated when a drainage tube has been put in. There are doubtless adhesions here between the pleura of the affected side and the pericardium, and by means of these the displaced heart will be drawn over towards the left as the cavity diminishes in size. If, in addition, there were adhesions between the surfaces of the pericardium, we should expect that some displacement to the left would probably occur eventually.

But to return to the second case. Would it not be just as well to employ the trocar at once instead of the aspirator? Certainly not, in my opinion. All authorities to the contrary notwithstanding, I decidedly prefer that air should *not* enter the pleural cavity in cases where there is the faintest possibility of the fluid still remaining serous. Where the contents of the cavity have hitherto been serum, and air is introduced, it is pretty sure to change the character of the inflammatory process present, and instead of simply serum we have pus to deal with in the future. Where a free opening is immediately desirable on account of the urgency of the symptoms, and there is no longer any doubt about the presence of pus, of course that is a different matter. Both these cases are especially interesting, because you will all meet with plenty of similar ones in your practice; and I should be very much ashamed of any of you who should ever fail to detect the presence of fluid in the pleural cavity after being taught here how simple and unmistakable the signs are which indicate this condition. An abscess in the cellular tissue of the chest walls, for instance, such as an inexperienced observer might at first suppose to be the cause of all the trouble in the first case, could never possibly produce the displacement of the heart and other marks of pleuritic effusion which are here so pronounced.

The length of time that is required for recovery after a spontaneous opening has occurred is much greater than you would be likely to suppose unless you had had some experience in regard to the matter. If the young man now before you gets well within two years from the present time, it will be quite as much as we can expect. The only thing to do in the way of local treatment will be to maintain a free opening by means of drainage tubes, and if at the end of two years there is found to be no discharge at all he may be regarded as over his trouble. Should the opening be allowed to close up temporarily, however, the result would no doubt be a large accumulation of pus, and the prognosis would become much more grave. Such openings, if left to themselves, are very apt to close prematurely when the discharge gets to be much diminished in quantity, on account of the tortuous character of the

passage leading to the cavity. By the patient's constantly wearing a drainage tube, however, the possibility of the occurrence of such an accident is effectually guarded against, and when the discharge has become comparatively small a little rubber cup for receiving it may be attached to the end of the tube, which will give rise to little or no inconvenience. In addition, we should do all that is in our power to build up the general health of the patient, and a change of air is often of very great service. In most cases a locality where there is an elevation of from a thousand to fifteen hundred feet (not enough to put too much of a strain upon the unaffected lung) will be found to be very beneficial, as respiration can be more easily performed at such an altitude. The patient should remain in the open air as much as possible, but should avoid too violent exercise and all forcible expansion of the chest until he has almost completely recovered. Riding will be of service in exercising the muscles and distending the lungs, and the kind of exercise which is of the greatest amount of benefit in pleuritic troubles is riding a fast-walking horse. Of course, the most nutritious diet should be employed, and as far as direct medication is concerned cod-liver oil, iron, and similar agents will be found most useful.

STRICTURE OF THE PROSTATIC URETHRA.

BY CLAUDIUS H. MASTIN, M. D., LL. D. UNIV. PENN., MOBILE, ALA.

ALMOST every surgeon who has had any experience with urethral diseases will call to mind how frequently he has been consulted by patients who come from under the care of their regular medical adviser with the statement that they are suffering with stricture, and that "the stricture is just at the neck of the bladder;" still he knows how very seldom it is we find the contraction lower down the penile urethra than some four to four and a half inches, — indeed, rarely even so low as the bulbo-membranous junction. In fact, it may with safety be stated that *the great majority of strictures* are located in the anterior portion of the canal, that few are ever so far down as the bulbo-membranous junction, and fewer still in the membranous urethra. In a word, we may assert that the further we go from the external meatus the less frequently do we encounter true organic stricture of the urethra.

Although surgeons differ widely as to the precise location in which we oftenest find the contraction, still they are a unit as to its infrequency in the deep urethra, — and justly so, for being the result chiefly of urethral inflammation, we naturally expect to meet with it at that point in the canal where the inflammation first began, where it was most intense in its action, and where it lingered longest in its duration; and as that portion of the canal is bounded by the external urethral

meatus on the one side, and a point four to four and a half inches distant on the other, it is within this space that we would most reasonably expect to find the obstruction, should one exist.

Sir Henry Thompson, than whom there is no sounder authority upon genito-urinary pathology living, writes: "Most rarely is any stricture found in the membranous portion, and never in the prostatic portion." Again: "I may confidently assert that there is not a single case of stricture in the prostatic portion of the urethra to be found in any one of the public museums of London, Edinburgh, or Paris. I am disposed to believe that some observers have been deceived in reference to it, or that it owes its supposed existence to inferences drawn from the results of examinations of the living body, which can by no means be admitted as evidence upon this subject."

In the face of this assertion of Sir Henry, we have the positive assurance from Leroy d'Etoilles¹ and from Philip Ricord, both of whom were eminent in this department of surgery, that they have respectively met with stricture of the prostate; and Leroy had at that time in his possession a specimen showing the contraction located within the otherwise healthy prostate. In addition to this we find a paper from the pen of Mr. Walsh, published in the *Dublin Medical Press* of January 26, 1856, in which he states that he had examined a specimen of this nature which was preserved in the Museum of the Royal College of Surgeons of Dublin, the disease having begun in the posterior portion of the membranous canal and extended itself into the prostatic urethra, where it resulted in a well-defined stricture.

Although Sir Henry is not disposed to accept these as perfectly reliable cases, he yet seems to think the existence of prostatic stricture mainly rests upon the observations of Leroy and Ricord. He prefers to consider it possible that certain enlargements of the prostate, which sometimes narrows and frequently renders tortuous that part of the urethra which passes through that organ, may have given rise to a condition easily mistaken for stricture; but that the organic narrowing of the urethra only, that narrowing which commences within its own walls, and which we understand to constitute the stricture which affects all other portions of the urethral canal, is not found in the prostate.

Based upon the authority of this eminent special surgeon, the opinion has become fixed in the minds of the best informed surgeons of this country, as well as of Europe, that we do not meet with prostatic stricture; and that those cases which have been reported as such admit of a reasonable doubt as to whether or not the precise locality of the contraction was accurately demonstrated.

In view of this fact I almost hesitate to place upon record the following history of a case which has been of especial interest to me, and

¹ Des Rétrécissements de l'Urètre, etc., Paris, 1845, pages 82, 83.

which I feel assured will not prove uninteresting to that class of my readers who are giving their attention to the subject of genito-urinary surgery.

J. J. B., aged forty-six years, came to Mobile from North Carolina on the 18th day of June, 1877, for the purpose of consulting me as to the propriety of an operation for stricture of the urethra. His history was briefly as follows: In 1856 he contracted his first blennorrhagia, and subsequently in 1861 a second case. In both instances he was treated with strong injections of nitrate of silver, from which he suffered a great deal of pain and inflammation. In 1862 he first discovered a diminution in the size of his stream of urine, which gradually lessened, until, in 1871, he was suddenly seized with complete and perfect retention, from which he was relieved only by forcible catheterismus. After this attack he passed along with comparative comfort, although still with difficulty in micturition, until 1874, when the stricture had again closed so completely that his retention was absolute, and he resorted anew to the forcible introduction of the catheter for relief; from this date his stream gradually diminished in size until his arrival in Mobile in June, 1877.

The fatigue incident to a long trip by rail, at a season of the year when we were having our most intensely heated term, had so exhausted him that I considered it the part of prudence to wait a few days until he could recuperate sufficiently for me to make an exploratory examination of his urethra. The day after his arrival, however, he was again taken with partial retention, and I was forced to try to evacuate his bladder with the catheter; this I failed to introduce, and succeeded in relieving him only by the use of opium, hot baths, etc., so that he could by drops overcome the excessive distention of his bladder.

Repeated examinations of his urethra showed that a sound of twenty-one millimetres — equal to about $11\frac{1}{2}$ English — could be introduced with perfect ease down the urethra to the distance of seven and a quarter inches, and that, too, without any stretching of the penis or distention of the canal. Beyond this distance it was impossible to pass the sound; and even when I had recourse to the smallest filiform whale-bone probes which have yet been constructed, also to those of silk-worm gut, not over one third of a millimetre in diameter, I found it impracticable to effect an entrance into the bladder. His urine was voided only by drops, and for weeks prior to his coming to Mobile he had been unable to pass a stream even of the smallest dimensions.

Having carefully examined the entire canal, not only with the ordinary sound, but with the ball probe, and the urethra metre (of Dr. F. N. Otis, of New York), I found its normal calibre to be thirty-two m.; that it was free from contraction at all points, from the apex of the prostate to the external meatus, save at one spot about an inch anterior to the bulb,

where it was narrowed to twenty-one and a half millimetres. With this state of affairs, — an open urethra showing a normal calibre of thirty-two m., through which a sound of twenty-one and a half millimetres was easily passed to the distance of seven and a quarter inches, and still no urine being expelled from the bladder save by drops, — I considered myself justified in diagnosing the case one of stricture of the prostate. And that diagnosis was based upon the measurements of the length of the average urethra, as given by Sir Henry Thompson,¹ which are as follows: —

" Total length, from anterior border of uvula vesicæ to meatus urinarius externus	8½ inches.
Dividing the canal in the usual manner into spongy, membranous, and prostatic portions, we have —	
Length of spongy portion	6½ inches.
" " membranous ditto	¾ inch.
" " prostatic ditto	1½ inches.
Total	8½ inches."

If this be the usual average length of a normal and healthy adult urethra, without stretching, and in the case given I was enabled to insert the sound of twenty-one and a half millimetres to the depth of seven and a quarter inches without obstruction, but beyond which point it was impossible to pass the smallest urethral instrument which as yet has been constructed, it is obvious that the impediment which did exist to the passage of both the urine and the filiform sound was situated somewhere within the last one and a quarter inches of the urethra; and as that distance is comprised within the prostatic urethra, it is safe to assert that the stricture was within the prostate. How far correct this diagnosis was I think will be proved by the succeeding history of the case.

Unable to effect the passage of any instrument into the bladder, I determined to operate by external perineal urethrotomy without a guide, as follows: On the 16th day of July, nearly a month after his arrival in Mobile, and after the usual preliminary preparation, I opened the membranous urethra upon the point of a staff just in front of the apex of the prostate, and holding the edges of the wound apart with the excellent contrivance of Mr. Avery, of Charing Cross Hospital, London, I placed my finger accurately against the point of the prostate to satisfy myself that there could be no possible mistake as to the exact locality of the stricture. Finding that the obstruction was clearly and unmistakably within the prostatic urethra, I at length succeeded, after long and patient endeavors, in passing an Anel probe through the coarctation on into the bladder; having removed this, I passed through the incision and into the prostatic canal a very small silk-worm gut

¹ The Pathology and Treatment of Stricture of the Urethra and Urinary Fistulæ. By Sir Henry Thompson, F. R. C. S. London. 1869. Page 3.

conductor attached to the staff of a Maisonneuve urethrotome, which was carried into the bladder, and the obstruction freely cut by the passage of the blade. The case progressed without anything worthy of note, and by the 25th of July the external wound having so far healed that I determined to cut the contraction, which has been mentioned as existing just above the bulb. This was accomplished with the dilating urethrotome of Dr. Otis, and the canal at that point restored to its normal size of thirty-two m. French.

The subsequent treatment consisted in keeping the urethra free by the regular introduction of a sound of this size until all the parts were thoroughly healed, and the patient left for his home on the 3d of August, with a urethra free from contraction or disease, and able to insert without force or pain a thirty-two m. steel sound evenly into the bladder.

Owing to the extreme rarity of stricture in the deep urethra, and the doubt which exists in the minds of the best-informed surgeons of the day as to whether it is ever found in the prostate, I have thought it would be proper to place this case upon record. As to the correctness of the diagnosis I feel certain no doubt can exist, and I am assured that when we take the measurements of an average normal urethra, which, according to the highest authority upon this subject, Sir Henry Thompson, is eight and a half inches, the penetration of a sound without force or stretching of the canal to the depth of seven and a quarter inches is a reasonable proof that its point has reached the apex of the prostate. Such being true, the case is made still stronger by the fact that when the membranous urethra was opened I was enabled to place the point of my index finger evenly and squarely against the apex of the gland. Now, although the eminent British surgeon asserts that some observers — referring to Leroy and Ricord — have been deceived in reference to this affection, and “that it owes its supposed existence to inferences drawn from the results of examinations of the living body, which can by no means be admitted as evidence upon this subject,” I feel that when in addition to the measurements of the canal by his own rule, as to length, I bring to bear the further proof, as demonstrated by the eye and the touch through an opening made directly upon the point of the gland, I am justified in making the positive assertion, “from the results of examination of the living body,” that this stricture was situated within the prostatic urethra. If, then, it be granted, — and it cannot be denied that the obstruction was in the prostate, — it may be urged in argument against me that this was one of those cases mentioned by Sir Henry “where certain enlargements of the prostate, which sometimes narrows and frequently renders tortuous that part of the urethra which passes through that organ, may have given rise to a condition easily mistaken for stricture.”

To guard this point, I was very careful to examine the outlines of the prostate with the finger in the rectum and the *sonde coudée* of Mercier in the bladder; the result was that I found the prostate small, with no evidence of disease. If any change existed, it consisted in the diminished size of the gland, which was so marked that I called the attention of the gentlemen who were assisting at the operation to the fact.

The probability is that the patient had in the first instance a prostatitis, and when he was taken with retention the forcible introduction of the catheter lacerated the urethra, and subsequently a deposit of in-nodular tissue took place, which in time narrowed down and finally blocked up the channel. The case is interesting mainly to the extent of showing that although stricture of the prostatic urethra is exceedingly rare, it is nevertheless by no means impossible that such a contraction may take place, and that, too, independently of any of those enlargements, either centric or eccentric, to which the prostate is so liable.

MOBILE, April 1, 1879.

RECENT PROGRESS IN OTOTOLOGY.

BY J. ORNE GREEN, M. D.

Opening the Mastoid Process by Surgical Procedure.—In previous reports mention has been made of articles by Professor Schwartze on this subject, which have been appearing in the *Archiv für Ohrenheilkunde* since 1872. They are now completed, and form a most valuable and scientific investigation of the whole subject based on his observation of fifty cases.

He begins with a review of the history of the procedure which was known for a long time as Jasser's operation, from Dr. Jasser, a Prussian military surgeon who performed it in 1776. In reality, however, it had been performed already by J. L. Petit, who died in 1750; he bored through the healthy bone and evacuated decomposed pus from the mastoid cells, and seems to have partially appreciated the value of the operation both on caries of the mastoid and on chronic otorrhœa. Jasser, almost accidentally, opened a carious mastoid with a probe, and was greatly shocked to find that water syringed into the opening ran from the nose; but as the result of the procedure was very favorable upon the ear disease he did the same operation upon the other ear, with the result of curing the chronic otorrhœa which existed there. Great expectations were now formed that the operation would relieve all forms of deafness, but on account of disappointment in this respect it soon fell into disrepute, yet was tried occasionally as a last resource, till Von Bergen, a prominent Danish physician who desired it performed on himself as a relief to deafness, dizziness, and subjective noises, died from purulent meningitis, the result of perforating the brain instead of the mastoid

cells. After this the operation was forgotten for several decades, till revived by Forget (1849) in cases of caries, and by Von Troeltsch and Follin (1859). Numerous cases of its adoption, mostly for the relief of caries of the mastoid with threatening fatal symptoms, followed till 1861, when Von Troeltsch proposed the operation for the relief of some obstinate otorrhœas.

To establish its value in the different varieties of disease of the mastoid, and the best method of doing it, was the task Schwartz e set before himself by accurately recording in chronological order any and every case of the operation which he himself performed, together with any peculiarities in each case. Save the first, the articles contain the histories of the cases in all important particulars, together with the results a long time after treatment.

The last article includes the conclusions drawn from the whole series of fifty cases. Of these were, —

Cured	35 cases = 70 per cent.
Uncured	5 " = 10 " "
Died	10 " = 20 " "

The of causes death were: meningitis two, meningitis tuberculosa one, pyæmia two, abscess of cerebellum one, anæmia one, epithelioma of bone one, tuberculosis pulmonum two. Of these ten cases, the fatal disease certainly was wholly independent of the operation in six; in three the connection of the operation with the death seems very uncertain; and in one it was undoubtedly the direct cause of death, the dura mater being perforated by a splinter of bone during the operation, causing traumatic meningitis. The cases show, as Schwartz e says, that it is in this way possible to cure the severest forms of caries, even of the petrous bone. The cases are also interesting as showing the effect of curing the chronic ear disease upon the general health. In one case chronic and very alarming debility was completely relieved; in two the favorable effect upon tuberculosis pulmonum was very marked; in one epilepsy was permanently relieved; in two facial paralysis was cured.

The effect upon the hearing of course depended upon the amount of destruction which had taken place before the operation: in eight it became perfectly normal; in twenty-three was very much improved; in four absolute deafness remained, the result of previous destruction of the labyrinth by caries.

The ages of the patients were: one year to ten years twelve, eleven to twenty years sixteen, twenty-one to thirty years thirteen, thirty-one to forty years one, forty-one to fifty years three, over fifty years five. The oldest was seventy-two years of age, the youngest two.

As indications for the operation are given, first, acute inflammations of the mastoid cells with retention of pus, where Wilde's incision or treatment with ice does not relieve the œdema, pain, and fever. Second,

cases in which there is intermittent swelling over the mastoid and fistulous openings in the skin, or where, in other words, nature is evidently endeavoring to effect an opening through the bone; in these cases the operation should be performed before symptoms threatening to life set in. Third, cases in which there is fluctuation beneath the cutis of the upper posterior wall of the meatus, corresponding to the floor of the antrum, or where a fistulous opening has already formed at this spot the operation should be performed without hesitation if brain symptoms are noticed. Fourth, distinct caries of the mastoid, of the mastoid and tympanum, and of the osseous labyrinth all indicate the operation, which should not be neglected even in the worst cases, as experience shows that even the whole labyrinth may be removed by necrosis, and yet the cavity fill up with healthy granulations which gradually ossify, and the otorrhœa is cured.

In cases where sequestra exist in a mastoid without external symptoms Schwartze considers the operation useful, but the difficulty is in making the diagnosis of this condition. Pain, fever, and a decidedly offensive odor to the otorrhœal secretion, in spite of the most careful cleansing and disinfection of the tympanum and Eustachian tube, point to the existence of retained pus in the cells.

The operation as a prophylactic measure merely, to relieve chronic suppuration of the tympanum, and to avoid the possible dangers of pyæmia, meningitis, and tuberculosis as suggested by Von Troeltsch and Jacoby, is considered by Schwartze of doubtful justification, on account of the risks of the operation and the possibility of anomalies in the formation of the parts involved. The operation is, however, an *indicatio vitalis* in these cases whenever symptoms of irritation of the brain are noticed.

Dividing the operations according to the conditions found, we have, —

I. Acute inflammation of the mastoid process without external abscess, cured eight, uncured one, died two, = eleven cases.

II. Inflammation of mastoid with external abscess or fistulæ, cured eighteen, uncured two, died five, = twenty-five cases.

III. Inflammation of mastoid, external wall healthy, the operation being an *indicatio vitalis*, cured two, uncured one, died none, = three cases.

In regard to the operation, after exposing the bone thoroughly and checking the bleeding, one of two conditions will be found: either the bone is softened by caries or contains fistulæ, or else the bone is healthy or sclerosed. If carious nature has already pointed out the direction for the operation, all softened bone should be removed with a gouge; fistulous openings should be enlarged with the hammer and gouge, till, if possible, the little finger can be inserted into the cells. If sequestra exist they must be removed, and all fungous granulations should be

scraped away with a sharp spoon. The wound should then be cleansed thoroughly, disinfected with a two per cent. solution of carbolic acid, and a drainage tube inserted, which may be carried out through the meatus if a fistula connects with that passage.

Where the bone is healthy or sclerosed, Schwartze prefers the use of the gouge or chisel and hammer to either trephine or borer, and the opening should be funnel-shaped, large externally, and gradually smaller, as thus better drainage is secured, and the risk of septic infection from the wounded surface is diminished. The opening should be made at the height of the meatus, and, to avoid the lateral sinus, should run inwards, forwards, and downwards, parallel with the meatus. The chief caution to be observed is to avoid the lateral sinus.

The after-treatment is extremely tedious, and requires considerable manual dexterity: the cavity should be washed with a warm solution, three fourths per cent. salt and one per cent. carbolic acid, and in some cases it is days before the inspissated pus is thoroughly washed out; the meatus must be kept free, inflation by the catheter used, and granulations either in the meatus or wound destroyed as occasion requires. The drainage tube must be renewed daily at first, but can afterwards be replaced by leaden plugs to keep the wound open. These should not be removed permanently till the suppuration in the depth of the ear is reduced to a minimum, and till the meatus is free from granulations and swelling.

Little febrile reaction was noticed in Schwartze's cases after the operation, but he recommends restricted diet, the use of the ice-bag for a time, and that the patient keep in bed till all fever is gone.

Past experience shows that the dangers from the operation itself are pyæmia, exposure of the middle fossa of the skull or of the lateral sinus; experience also shows that these two accidents last named may occur without injurious effect if the dura mater and sinus are uninjured, and they may unexpectedly happen to the most careful surgeon from a malformation of the bone, which is, however, extremely rare.

PROCEEDINGS OF THE ESSEX NORTH DISTRICT MEDICAL SOCIETY.

THE annual meeting of the Essex North District Medical Society was held in Haverhill, May 7th, Dr. W. H. Kimball, president, being in the chair. After the usual routine of business was completed, the society listened to a paper on Animal Heat and Fever, by Dr. E. P. Hurd, of Newburyport, corresponding secretary. The following is a synopsis.

The essayist, after a brief consideration of the nature, conditions, and theories of animal heat, said that to-day the chemical theory of Lavoisier demands our chief attention, for around it harmoniously gather all the facts of physiology and chemistry. The latest and most exact science testifies to the general

truth of the theory, although it has undergone important modifications since Lavoisier's time.

Lavoisier, in 1777, demonstrated the striking relations which exist between respiration and combustion, comparing the human body to a lamp whose *wick* (or point of combustion) was the lungs. Calorification was due to the combination of vital air (oxygen) with the base of fixed air (carbon) and inflammable air (hydrogen) furnished by the blood.¹ This view of Lavoisier, that the precise seat of organic combustions is the lungs, was combated by Lagrange, who showed that the lungs were not essentially hotter than other organs; by Spallanzani, who demonstrated that respiration goes on to some extent by the skin; by Williams Edwards, who showed that when frogs were confined in hydrogen gas they still generated CO₂, as proved by analysis of the excretions; and by Magnus, who analyzed the blood and obtained its gases, showing that oxygen and CO₂ exist in the blood, and the latter in greater proportion in venous blood.² (This seemed to show that the carbonic acid which is removed by the lungs is formed in the system at large.) It became then generally admitted that the lungs constitute only the place of exchange of gases; the *foyer* of organic combustions was in the tissues. The rapid emaciation attending fevers was remarked, and striking instances were recorded where for some hours after death bodily heat goes on augmenting.³

It is singular that the first experiments made to determine the source of animal heat should have given confirmation to the theory of Lavoisier that the lungs were the seat of organic combustions. Crawford in 1788, Scudamore in 1824, Krimer in 1823, Davy in 1815, Becquerel and Breschet in 1837, — these and other able experimenters found the temperature of arterial blood to be greater than that of venous by from half a degree to a degree or more. These experiments were made on animals recently killed, and were erroneous and unreliable, as shown by G. Liebig in a masterly treatise on animal heat published in 1854. He showed that it was necessary to operate on living animals. In opening the thorax you cool the contents of that cavity; and even if the thorax be not opened, if the animal have ceased to live, a stagnation of blood occurs, which changes the distribution of caloric. The older experimenters made much of thermometric observations of the blood in the cavities of the heart, in the veins and arteries, of animals on which they experimented after death. Liebig pointed out the fallacy of this mode of observation.⁴ He records many experiments of his own on living animals, which prove that venous blood is considerably hotter than arterial. Fick, in 1855, undertook like experiments with like results. Hering has published observations of a similar nature.⁵ In 1857 appeared a memoir by the late Claude Bernard, recording a long series of experiments confirmatory of the conclusions of Hering, Liebig,

¹ Longet, *Traité de Physiologie*, Paris, 1869. Tome ii., page 493.

² Claude Bernard, *La Chaleur Animale*, Paris, 1876. Leçon 2.

³ In one instance (observed by myself) the bodily heat, which was 107° at death, did not perceptibly decline from that point (as tested by the thermometer in the axilla) for three hours after life was extinct.

⁴ Claude Bernard, *loc. cit.*, page 43. The left side of the heart, being thicker than the right, is better protected against refrigeration, and arteries are, as a rule, thicker and better protected than veins.

⁵ Cited by Bernard.

and Fick, and establishing the theory of capillary combustions on a solid basis. Bernard operated, as Breschet had done, mostly with thermo-electric needles.

If the blood in the veins is hotter than the blood in the arteries, and the blood in the right side of the heart hotter than the blood in the left (as shown by the careful experiments with thermometric instruments of Bernard and others above mentioned), the presumption is that the chemical processes, of which heat is the expression, take place in the systemic capillaries, or in the cells of the tissues.

Bernard proved that thermogenesis is a phenomenon essentially *extra sanguine* by plunging his thermometric needles into solid tissues; the temperature of these parts was indicated, and this was compared with that of the entering artery and emergent vein, the result always being that the blood was cooler by some fractions of a degree than the organs which it traverses.¹ Indirect proof, a deductive kind, is found in the fact that animals, as zoöphytes, which have no blood, have a heat of their own which is higher than that of the surrounding medium; and even plants generate heat, as proved by experiments of Hubert, Vrolick, and Vriese.² From these experiments (some of which were quoted) the writer drew the important biological lesson that life and nutrition and the evolution of heat are inseparably associated. The essential characteristic of all living beings is nutrition, and this is composed of two factors exactly balanced, assimilation or organization, and disassimilation or disorganization. There is an outward movement of waste, and an inward movement of repair. Oxygen and pabulum are necessary adjuvants to these processes, which in health are exactly balanced, oxygen being the complement of the factor disassimilation, food being the complement of the other factor. The conclusion at which the essayist arrived, after further speculations as to the nature of calorifying processes in the animal system, was that the essential phenomena of life occur in plants and in animals that have no blood, but in the higher animals, a healthy circulation, bringing constant supplies of oxygen and pabulum, and conveying away the *débris* of the tissues, was necessary; it is in the cells that oxidation and calorification take place, and the condition of evolution of heat is the contact and exchange between the elementary tissues and the blood at the moment when the chemical acts of nutrition take place.

In answer to the question, What is the material constantly consumed in thermogenesis? it was considered problematical, as no one has ever explained the transformation of pabulum into bioplasm, or the steps attending disintegration of bioplasm or formed tissue. There is no doubt as to results. Tissue is consumed, and we trace its products in the excreta, and the animal body is kept for days at a nearly constant temperature, though not an ounce of food is taken during this time. (Allusion was made to the experiments on starvation performed by Chossat and Martins; these are recorded in the chapter on Animal Heat in Physiology of Common Life, by G. H. Lewes.) Liebig's classifi-

¹ Longet, loc. cit.

² Longet, loc. cit., p. 497. Vrolick and Vriese have shown that concurrently with the elevation of temperature, which is manifested in the spadix of certain plants at the flowering season, oxygen disappears from the surrounding air, and is replaced by CO². The temperature of the spadices of *Arum Cordifolium* was found by Hubert to be twenty degrees above that of the circumambient atmosphere.

cation of foods into plastic and calorific was considered a convenient one, though open to grave objections; these are forcibly put by Lewes in the work above referred to. Yet nitrogenous articles are especially histogenetic, and fats and other ternary bodies are especially calorific, experiments by Flint, Jr., Pavy, and others having shown that the heat value of sugars, oils, etc., is greater than that of albumen. Experiments of Binz, recorded in the *Practitioner*, have proved that nearly all of the alcohol ingested is consumed in the system, and that its products are CO_2 and H_2O . By virtue of such decomposition, as much heat must be evolved as if the same quantity of alcohol were burned in a spirit lamp.

As to the seat of these combustions, the probabilities are all in favor of the view that they take place at the *foyer* of organic combustion generally, namely, the inmost recesses of the tissues, and under the excitation of nutritive or so-called vital force. We know that the chemico-vital processes on which heat depends are enhanced by food as well as by moderate quantities of alcohol, and there is reason to believe that in the destructive processes taking place in the tissues combustible food elements and alcohol participate; whether the latter retards the waste of the tissues, as some have taught, is known only inferentially.

It would be reasonable to expect that processes which in the recesses of the tissues give rise to normal heat should, when exaggerated, produce fever. There may be a more than ordinary loss of heat from the cutaneous surface by radiation and evaporation, and yet thermogenesis may be excessive, and may destroy life by its baneful effect on the tissues.

Theories of Fever. — The hypothesis of calorific nerves and nervous centres (supported by Bernard) was discussed, and shown to be destitute of proof; that of a primitive perturbation of the vaso-motor system was found to be equally wanting in solid foundation. In fevers the nervous symptoms are not constant, and when they occur they are secondary to the nutritive disorders. The abnormal heat is not due to simple paralysis of the sympathetic, for division of the sympathetic does not produce fever. The evidence all points to a pyretogenous cause at work in the blood, and, by its irritating effects on the tissues, exaggerating all calorific chemico-vital processes. In short, the *humoral* theory is the best. The *materies morbi* of fevers in general is unknown. The germ theory lacks inductive proof, and certainly cannot apply to sympathetic fever (from wounds or surgical operations, etc.), or to ephemeral or catarrhal fever. The hypothesis of a ferment in the blood, exciting and giving preponderance to disassimilation, is more probable; this ferment may be a chemical poison from the atmosphere, or it may be a morbid product of the system itself.¹

The effects of heat on the animal economy were next described, and allusion was made to experiments on birds, hares, dogs, etc., exposed to an elevated temperature. High heat is a veritable toxic agent. The animal is thrown into a high fever, and death takes place when the febrile heat reaches 116°F .

¹ I still cling (with dullness that is characteristic) to this expression of opinion, after a careful perusal of the able paper of Dr. Becker, in the *JOURNAL* for May 15th. As an effort of the scientific imagination (supported, I confess, by striking analogies) Dr. B.'s theory leaves nothing to be desired.

in birds, 110° in mammals. A fixed degree of temperature 4° or 5° above the normal soon kills. Thermogenesis is heightened by the stimulus of external heat, conducted by the blood from the periphery to the tissues and central organs; circulation and respiration are quickened. The animal dies agitated, panting, convulsed, with loud outcries. *Sectio cadaveris* shows the heart's action ceased, and the blood in the veins very dark; muscular rigidity speedily supervenes. The muscular system especially suffers from excess of heat, the muscles of organic life most of all. Heat is a paralyzer of the heart. This organ is most speedily and profoundly affected, but the voluntary muscles undergo serious lesions. High heat coagulates the muscular syntonine, and thus destroys the physiological function of the muscle. Long pyrexias induce fatty degenerations of almost all the tissues; the heart, the liver, the kidneys, the spleen, etc., undergo softenings, the nutrition and constitution of the anatomical elements under the toxic influence of heat having been profoundly altered.

Interesting experiments of Claude Bernard (section of the nerves of an extremity) have shown that the toxic effects of heat are exercised directly on the anatomical elements, and not through the intervention of the nervous system.¹ Fever being an exaggeration of the disassimilating processes of nutrition, the assimilating processes are lessened or suspended; hence the loss of appetite and arrest of digestion, etc. The tissue waste reveals itself in the high-colored urine, which has urea and uric acid in abnormal proportion.

In all febrile maladies the thermic cycle presents three periods or stages, — an initial or ascending period called "augment," a stationary period called "fastigium," a terminal period called "issue." [The typical forms of these stages were described by the help of graphic representations which were exhibited to the meeting, the essayist remarking that no general work on practice had treated fevers, from the point of view of march of temperature, so scientifically and satisfactorily as that of Jaccoud.² He continued:]

Enough has been said to indicate what a fruitful field for observation and study the febrile cycle affords, and how indispensable for accurate diagnosis and prognosis is the clinical thermometer. We see, moreover, how absurd must be the notion that this orderly series of morbid changes can be much affected by small doses of sweet spirits of nitre, muriatic acid, and mindererus, and how infinitely more foolish the notion that the thermic oscillations can be in any way influenced by attenuated doses of rarefied moonshine, in the form of third dilutions of aconite and belladonna.

We are becoming more and more convinced that there is an orderly sequence of events in fevers as in all other phenomena of nature, that there is law and not disorder even in disease, and that human skill and knowledge are impotent materially to modify the course of febrile diseases. There will be occasions when your frail bark will be tossed on angry billows, when by adroit manœuvres you may avoid rocks and quicksands; there will be other occasions when the utmost you can do is to determine your bearings, your latitude and longitude, powerless even to guide the craft amid the raging storm.

¹ Loc. cit., Leçon 18.

² The work by this author, *Pathologie Interne*, deserves translation.

"Nature with equal mind
Sees all her sons at play;
Sees man control the wind,
The wind sweep man away;
Allows the proudly riding and the foundered bark."

The treatment of fevers comprises the following principles: (1.) Eliminate the cause. (2.) Support the strength. (3.) Meet dangerous complications as they may arise. (4.) Rescue the organism from the baneful effects of the fever heat.

(1.) The first indication, to neutralize or remove the *materies morbi*, cannot be efficiently met, because we do not know what the *materies morbi* is. It may be an altered condition of the blood from cold or heat, or constitutional cachexia, or from retained excreta, the pyretogenous element acting as a ferment, poisoning the whole mass of the blood, and exciting to inordinate activity the organic combustions; it may be a living germ from the vegetal world, or a degraded form of bioplasm.

We are wholly in the dark on this subject, and therefore cannot intelligently combat the *materies morbi*. We are certainly not warranted, on the basis of positive knowledge, in dosing our fever patients with antiseptics and antizymotics with the intent to neutralize in the blood or destroy the fever ferment or fever germ. I cannot except the traditional chlorate of potash and euchlorine, permanganate of potash and salicylic acid, carbolic acid and sulpho-carbolic acid, sulphurous acid and bisulphite of sodium, or even, in this connection, quinine and alcohol. Till we have positive knowledge, a judicious and respectful skepticism is our highest wisdom. Nevertheless, while we may not aim our shaft at an imaginary foe, we do well to keep the emunctories open, as there is reason to believe that through the ordinary channels of excretion the fever poison passes out of the system. It is certain that return to health is coincident with return to normal activity of the organs of secretion and excretion. Hence the continued use of the customary sweet spirits of nitre finds justification; the vinum ipecacuanhæ in diaphoretic or expectorant doses; the acetate, citrate, and bicarbonate of potassa, and other mild diuretics; and the occasional laxative of senna, rhubarb, castor oil, or buckthorn when the bowels are confined.

My own limited experience does not lead me to repose much faith in acornite or other nerve sedatives as febrifuges. It is very improbable that the morbid heat production is at all influenced by these drugs, or that they are in any marked degree antipyretic. (2.) The second indication, to support the vital forces, includes all food and stimulants, as well as the hypnotics and anodynes which you give to procure sleep and relieve pain and restlessness. Doubtless an important advance in rational therapeutics has been made since bleeding and depressants in the treatment of fevers were abandoned, since Todd taught us to use alcoholic stimulants more freely and Graves fed fevers. And yet just here caution and judgment are needed. I am convinced that many cases of continued fever do better without a drop of wine and only a moderate supply of liquid aliments. Others do better with a little wine or whisky every two, three, or four hours, and an abundance of pure milk. Sometimes it is advantageous to begin the stimulant treatment early, as where

the tendency to death is markedly by asthenia. We must combat the fever heat by our cold baths and quinine at the same time that we stimulate with alcohol. Restlessness, wakefulness, and delirium must be controlled by camphor and Dover's powder, or better still with chloral, or the bromides with hydrobromic acid. (3.) The third indication, to meet complications as they may arise, comprehends all those measures, medical and surgical, necessary to arrest hæmorrhages, check diarrhœa, stay the progress of ulcerations, etc., attention to which is necessary to save the life of the patient. (4.) The fourth indication, which we can happily do much to fulfill, is to restrain as far as possible morbid heat production, or save the tissues from its toxic effects.

[The writer here gave the degrees of fever heat which are fatal and those which are considered dangerous, citing Dr. Clifford Allbut, in *Braithwaite*, Part LXIX., page 24.]

Can anything be done to lessen heat production? Quinine in large doses is, I believe, the only safe antipyretic which even temporarily lessens organic combustions. Salicylic acid is of limited and doubtful utility. Clinical experience has determined that quinine is a veritable antipyretic, and therefore, in a sense, specific in all fevers.

A few years ago we should have shuddered at the suggestion of giving to a child three years of age, laboring under a fever heat of 105° F., five grains of quinine every hour, with the view of bringing down the fever; now we find by experience that such doses produce no immediate bad effects, and that we can obtain a fall of several degrees by a few doses. Much larger doses may be given to adults, generally with gratifying results. Any cinchonism that ensues is of transient duration. The quinine in dose of a couple of grammes is often conjoined with the cold bath, with more marked antipyretic effect.

It is not claimed that the antipyretic cuts short the febrile processes; the most that the advocates of this treatment claim is that by virtue of its anti-fermentative action on the blood or its tonic effect on the tissues, or by virtue of being a *germicide*, quinine restrains excessive waste, promotes assimilation, checks the riotous production of bioplasm, and thus rescues the tissues, and especially the heart, from the destructive effects of high heat. If it acts as an antiseptic or germicide, it is certainly not very successful in its work, as it does not cut short the fever. To do good its use must be persevered in, and it must be given boldly. Whenever the temperature reaches 104° F. the quinine treatment must be commenced, and it must be given in repeated large doses at short intervals till the temperature falls to nearly the normal figure. (Ten grains an hour to an adult will bring down the fever heat after a few doses to nearly the normal.)

The next antipyretic to be mentioned, and probably the first in importance, is cold, applied in the form of cold baths, sponge baths, wrappings of ice-cold water, or ice-bags.

Twenty years ago it would have been considered madness to take a child, in the first stage of scarlet fever, manifesting delirium or stupor from febrile calorification and the force of the virus, immerse it in cold water, and keep it there for several minutes, pouring (it may be) cold water on the head of the child till rigor supervened, the thermometer indicating the point at which the child should be removed from the bath. Now this is done with seeming im-

punity, and is countenanced by good clinicians as legitimate practice. Some of us country physicians think that in desperate cases we have saved life by these means. In ordinary practice cold baths are inconvenient, and our patients are shy of this mode of treatment; cold sponging is much resorted to as a substitute. The patient is stripped of his clothing and laid on a rubber cloth; he is rapidly sponged from head to foot with ice-cold vinegar and water till the temperature falls from 104° or 105° to nearly 100° F.; then he is wrapped in a dry flannel blanket, and returned to his bed. The cold sponging is repeated whenever the thermometer indicates 104° F.

As to the results of the antipyretic treatment, after an experience of nine or ten years, we cannot speak very confidently. The immediate effects are generally very salutary, but the fever runs on; repeated baths somewhat exhaust the patient, and our large doses of quinine may do lasting harm.¹ Certainly hospital statistics do not speak very encouragingly for the antipyretic treatment of fevers.² But clinical statistics are notoriously unreliable. It is to such statistics that homœopaths appeal, and we know with how little reason. The antipyretic system seems to be theoretically sound, and we have probably yet to learn how it may be most safely and efficiently managed. We must feel our way along, proving all things and holding fast that which is good; we must persevere, hopeful; follow the best lights; where certainty is impossible be content to remain in doubt; indulge no vain dreams; obey the dictates of common sense.

"I say, Fear not! Life still
Leaves human effort scope;
But since life teems with ill,
Nurse no extravagant hope.

Because thou must not dream, thou needst not then despair!"

In discussing the essay, Dr. Towle, of Haverhill, said that he had little faith in the antipyretic treatment. He was shy of extreme measures. — Dr. Lovejoy thought that quinine and cold baths simply combated symptoms, — the disease was not arrested; and said that if he were to put a child laboring under scarlet fever into a cold bath, and the child were to die, he should expect to be blamed for causing the child's death. — Dr. William Cogswell narrated instances that had come under his observation where large antipyretic doses of quinine seemed to do good. — Dr. Huse, of Georgetown, had treated scarlet fever with tepid baths, the water being gradually cooled down to 60° F., with benefit. This treatment was repeated every day for a week. — Dr. Stackpole gave very little medicine in fevers, and believed in simple treatment; we have to work so much in the dark that we should be cautious and expectant. He

¹ "If administered in heroic doses it frequently overdoes the work required of it; it produces a cinchonism which adds to the burdens of the already struggling system, whilst it increases the derangement of the nervous centres and intensifies the disturbance of the digestive function." (Dr. Edward Warren in *Medical Record*, vol. xi., page 46.) See also Peters in the *Medical Record*, vol. xv., page 511. "Professor Lindwurm cautions against its use in large doses in weak heart." "Professor Binz shows that large doses may produce death by paralyzing the heart." Niemeyer abandoned large doses. Woods and Bartholow speak of its irritant action on the alimentary canal.

² See *Medical Record*, November 9, 1878, page 366, for statistics which show that in Bellevue Hospital the antipyretic treatment has not been proven to be of certain therapeutic value. According to the *Medical Record*, vol. xv., p. 510, the mortality of several of the continental hospitals has greatly increased under this treatment.

would not dare to use the cold bath in scarlet fever, and did not believe in "reducing the pulse." — Dr. Manley had given up the quinine treatment, and substituted small doses of calomel, from which he had seen good results in fevers. — Dr. Chase believed in occasionally giving a large antipyretic dose of quinine, say a scruple, in typhoid fever. He had seen the fever heat come down in a few hours from 107° F. to nearly the normal. Dr. E. P. Hurd, in closing, said that one object of his paper had been to inculcate caution in the treatment of fevers, we know so little about the causes of fever and the action of medicines.

PROCEEDINGS OF THE NORFOLK DISTRICT MEDICAL SOCIETY.

JANUARY 14, 1879. *Vaccination followed by Death.* — After the transaction of business, DR. PETERS, of Roxbury, read the case. Virus was bovine, fresh, and of the best quality. Perfectly developed vesicles the eighth day. Next seen the fourteenth day. The space occupied by the three vesicles, with the skin around it, was black and sloughing, forming a deep ulcer two and a half inches long by more than an inch broad. Elsewhere on arm were superficial ulcerations, and three blebs filled with turbid, serous fluid. Arm twice the size of its fellow, boggy and cedematous. At shoulder-joint and half-way to sternum vivid redness of skin. Little constitutional disturbance. Each of the next three succeeding days the constitutional disturbance grew more serious, while the appearance of the arm was steadily improving. The urine became scanty and high colored, the face white and slightly puffy; but on the morning of the eighteenth day these symptoms were improved, and the child seemed better, while the arm was rapidly healing. A little later in same day hands and feet grew cold, chill crept up the limbs, the skin turned bluish, and the child was soon dead. No urine could be obtained before or after death. — DR. S. C. MARTIN said that the fatal result in that case was due to the constitution of the child or to septic influences near its home. Five hundred individuals were successfully vaccinated from the same animal, and probably thirty from the same vesicle. — DR. PETERS replied that he had made no complaint of the virus. He had used the same on other children, and the resulting vesicles had run a regular course. The child that died had had some infantile ailments some time previously, and he had waited until it was in good health before vaccinating. The house was in the neighborhood of a marsh, but the family lived in an upper story. He did not notify Dr. Martin, because he did not hold the virus responsible for the death. — DR. EMERY, of Roxbury, said that he vaccinated a healthy child with fresh animal virus. Immediately the weather became intensely cold. On the eighth day there was a typical vesicle. Several days after was called to child, and found a large, deep ulcer where vesicle had been, with redness, swelling, etc. Applied poultices, but abscesses formed in axilla, and above and below the ulcer, and just above the elbow. Child recovered under supporting treatment. Dr. Emery received information from the mother that the child slept in an intensely cold room (he believed thermometer would have proven temperature to be below zero), and that she found the child one morning sitting up in bed, uncovered, and scratching the vesicle

with its finger nails. He could learn of no other cause for the trouble. — DR. H. A. MARTIN thought that if one hundred children after vaccination were exposed to temperature below zero they might all suffer as did the patient of Dr. Emery. The causes of trouble are almost always connected with morbid atmosphere, irritation of sore, and lack of care. The sleeve becomes glued to the arm, and the scab is torn off. The matter becomes putrescent, and develops intensely septic poison. All cases should be investigated by impartial men. — DR. CUSHING, of Dorchester, expressed doubt whether any one could produce erysipelas at will, and the case of Dr. Peters was undoubtedly one of erysipelas. He thought the lesson to be drawn was that no matter how carefully the virus be selected, or how judiciously the time be chosen, fatal accidents will sometimes occur. All cases of this kind should go on record, to show that the best precautions will not always avail.

Ingrowing Toe Nail and its Treatment. — DR. H. A. MARTIN read a paper on Ingrowing Toe Nail and its Treatment, Ancient and Modern. (Reserved for publication.) — DR. MECUEN, of Roxbury, had successfully treated two cases (one of which was double) in the following manner: He elevated the edge of the nail, and passed deep through it a needle armed with heavy silk. The silk was then passed through a strip of adhesive plaster, which was drawn over a fulcrum formed of the half of a piece of lead-pencil, round surface down, close to the nail. Thus the nail, which had been first scraped thin, was kept elevated. A dressing of boracic acid and lint was employed.

MACKENZIE ON DIPHTHERIA.¹

In this little book of one hundred pages is contained a very interesting and learned treatise upon the disease in question, and the author has brought to the task not only the results of his large experience, but also a thorough knowledge of the medical literature pertaining to the subject, both modern and historical.

It might reasonably be feared that a special practice in diseases of the throat would lead one to attach too great importance to the local manifestations of so complicated a disease as diphtheria, but no such charge can be made with justice in the present case.

The bibliographical references in the foot-notes are very numerous, extending backwards, in the chapter on the History of Diphtheria, to the work in Sanscrit by D'hamantare, to a time about coeval with Pythagoras. There is claimed to be found in this book a description very suggestive of diphtheria. The Askara, frequently mentioned in the Talmud as a fatal epidemic, is said by Dr. Mackenzie to be supposed to have been diphtheria. It was described by Rashi, the learned commentator of the Talmud and Old Testament, who remarks that "sometimes it breaks out in the mouth of a man, and he dies from it." He further observes that "sudden death comes from suffocation."

¹ *Diphtheria: Its Nature and Treatment, Varieties and Local Expressions.* By MORELL MACKENZIE, M. D., London, Senior Physician to the Hospital for Diseases of the Throat and Chest, Consulting Physician to the North Eastern Hospital for Children, and Lecturer on Diseases of the Throat at the London Hospital Medical College. Philadelphia: Lindsay and Blakiston. 1879.

The "Syriac ulcer," described by Aretæus at the close of the first century after Christ, is considered also to have many points of resemblance to the diphtheria of to-day. Actius of Amidas in the sixth century delineated a disease as presenting white and ash-gray spots in the pharynx, slowly ending in ulceration. From that period there is no record until the sixteenth century, when its occurrence in Holland was described by Peter Forest (1557), and a few years later most accurately by Von Woerd (1585).

The first published description with definite mention of a false membrane was by Baillou, a French physician (1576). The literature since then has been large, at first by Spanish and Italian physicians; and from the middle of the eighteenth century on, the contributions have been abundant, both by English, Continental, and American writers, in the form of monographs upon recorded epidemics.

The ætiology and pathology are ably discussed. In the chapter on pathology we find at the end the following summing up:—

"The most cursory study of the general pathology of diphtheria suffices to assure us that it is an acute general disease, with certain local manifestations. The *primary septicæmia* is due to the specific poison, but absorption from the decomposing lymph is, no doubt, a cause of *secondary infection*. In all cases the attack is associated with some degree of constitutional disturbance, while in the severest forms there is extreme disorganization of the blood, and consequent implication of nearly every tissue in the body. The general infection is shown at a very early stage, as well as at a period when the local manifestations have disappeared. Besides the constitutional disturbance by which the attack is ushered in, there is the frequent derangement of the renal function, the marked prostration of strength, the functional disturbance of the heart, and, at a later period, the extensive implication of the nervo-muscular system. The local symptoms, the false membrane, with its parasitic growths, must be looked upon as the first evidence of constitutional poisoning; in fact, as the first of the secondary phenomena."

The description of the symptoms of the disease is given as they occur in the following six different constitutional forms: (1) the typical form; (2) the mild or catarrhal form; (3) the inflammatory form; (4) the malignant form; (5) the gangrenous form; (6) the chronic form. Differences dependent on site are described under (a) nasal diphtheria, and (b) laryngeal diphtheria or croup. At the end of this chapter there is a special discussion of some of the most important symptoms of the disease, namely, albuminuria, the false membrane, fever, and cutaneous eruptions. The secondary elevation of temperature described by Faralli as occurring in cases of moderate severity towards the fourth day is referred to, and is explained as due to, the appearance of fresh diphtheritic patches on parts previously healthy; or, more frequently, to the appearance of glandular enlargements, the result of secondary infection. The paralyzes are described in a separate chapter.

In the chapter on Diagnosis the rules given are simple and practical, the author frankly acknowledging the frequent difficulty, as well as the impossibility in some cases, of making an absolute diagnosis. The difficulty is generally confined to those cases which deviate from the normal type in the direction either of unusual mildness or of exceptional severity.

The chapter on Prognosis is followed by that on Treatment. This latter is full of interesting and valuable information, and the rules for general and local treatment are based upon sound ideas as to the pathology of the disease.

The author's views on the relation of croup and diphtheria are made manifest by the title to Chapter IX., Laryngo-Tracheal Diphtheria (formerly called Croup); and the arguments in support of them are skillfully presented. The complete identity of all cases of croup with diphtheria, however, is by no means a universally accepted fact; and in view of the question being still a mooted one, the report of the commission of the Royal Medical and Chirurgical Society of London, shortly expected, will be awaited with great interest.

Short chapters on Nasal Diphtheria and Secondary Diphtheria bring the book to a close.

It may be a disappointment to some that the author has not enriched the pages with cases and statistics from his own large practice. The book, however, is modestly claimed in the preface to be "a short sketch of the affection from one who has had considerable opportunities of studying it." It is certainly a great deal more than that, and will be considered a valuable contribution to the literature of this disease.

PUBLIC HEALTH IN MINNESOTA.

THE seventh annual report of the State Board of Health of Minnesota contains, as usual, much that is of great interest and value. The discussion of the appearance of small-pox in that State and its limitation to very narrow areas illustrates well the ease with which a general epidemic of that disease may be prevented by wise and vigorous action. The board prefers fresh animal vaccine matter to the humanized.

The paper by Dr. Staples on diphtheria occupies about one half of the report, embodying the replies to inquiries from thirty-five of the fifty-three physicians to whom circulars were sent, and also the results of microscopical investigations by Dr. Boardman and Professor Danforth. From 1870 to 1877, the deaths in Minnesota from diphtheria were for the several years respectively 63, 62, 41, 236, 226, 379, and 370. Beside the unknown element in the causation of the disease, by virtue of which it appears, disappears, reappears, and prevails for periods of various lengths in different places, damp soil, bad drainage, possibly polluted drinking-water, foul air, filth, damp and cold weather, and debilitated constitutions, one or several, were associated with the cases of diphtheria with greater or less frequency. In some towns the disease appeared to be of spontaneous origin; commonly it was shown to be contagious and infectious, — good illustrations being given from Rochester, Eyota, and St. Peter. A young man came to work in harvest for Mr. S. from a town ten miles distant, where his sister and brother had died of diphtheria, although he did not have the disease. One week after his arrival, Mrs. S. was taken with diphtheria. The boy did not sleep in the house, but Mrs. S. had handled some of his clothing. She had a comparatively mild run of the disease. Mrs. S. had a nursing infant. One week from the time of the attack of the mother, the babe was taken sick, and died in fourteen days. Its throat was very much

swollen, and there was a yellow exudation in it with a bad odor. Within a week of the child's death, two hired men and a servant-girl took the disease, but recovered. They were all well by the 1st of September. Mr. S.'s little boy, who had happened to be away at his grandmother's during all the sickness, was brought home on the 20th of October. The child was at home one week, when he was taken with diphtheria, and died in a week from the time of the attack. No other cases occurred in the neighborhood. The S. family was at the time living in a log house. . . . At a time when diphtheria was not prevalent within a radius of ten miles, a lady went to a remote part of the county to attend the funeral of a relative who had died of this disease. She there came in contact with others of the family then sick. In a week she had a severe attack of diphtheria. Her babe took the disease from its mother, and died; the other remaining child had a severe attack, and several cases followed in the neighborhood. As to the question of the virulence of the contagion giving character and severity to the disease, in the above cases, it was found that in this particular family three out of five died. Those taking the disease direct from these malignant cases suffered more severely than in cases where the disease was contracted later in the little epidemic that followed. . . . Two cases have occurred where it *seemed* to have been conveyed by infected clothing a distance of many miles. The first was the case of Mr. S., who visited a family twelve miles from his home, where there was diphtheria. In one room five were sick, and the air was very offensive. Five days after his return home, his daughter fell sick, and on the following day a young man in his employ. These were the first and only cases in the neighborhood. The second case was very similar. A mother visited a daughter twenty miles away, whose child was sick of diphtheria, and died during her stay. She returned home, and on the sixth day after one of her children came down with the disease, and in a few days still later two others. There were no other cases in that vicinity. Many other cases pointing toward the infectious nature of the disease have occurred, and the evidence is strong that it is often spread in this way. In pure air, and upon dry, porous soil, even when not always clean, the contagious and infectious element seemed, with a few exceptions, nearly if not quite wanting, and the disease pursued a very mild course; and in the most severe outbreaks the rigid isolation treatment practiced in small-pox was apparently successful in "stamping out" the disease. There is the common difference of opinion as to the identity of membranous croup and diphtheria. The mortality reported was, from 13.7 to one hundred per cent., no account being given, in that particular, of the mild epidemics and sporadic cases. The measures recommended are general attention to sanitary laws, including cleanliness, isolation, disinfection, and a supporting treatment.

Dr. Peckham's paper on the sanitary water survey of the State shows the constant and increasing danger of contamination of soil and water by the usual methods of constructing and managing privies and cess-pools, and the evils arising from pollution of streams by sewers. Professor Peckham suggests a useful form of lantern devised by him, as a result of experiments, for avoiding the danger of accidents from dust, fires, and explosions in flouring mills. He closes the top and bottom of the lantern by three or more plates of tin placed horizontally about one quarter of an inch apart, and arranged with holes

through them as follows, commencing, say, at the bottom: The lower plate is perforated with holes near the right side; the next plate above has holes near the left side; in the next above, the holes are in the right side, and so on through as many plates as desired, the top to be arranged in the same way. The air then would enter at one end of the lower plate, pass between the plates and through the other side of the second plate, then across again between the second and third plates, and then through the third, and so on into the lantern. With such an arrangement the force of the dust is completely broken upon passing through the first and striking the second plate. Hardly any dust enters the lantern under the most favorable conditions that can be contrived for getting it in, and no flash is produced.

In his report as a delegate to the yellow fever conference in Richmond, Dr. Hand, president of the board, makes the sound statement that "a judicious quarantine may be of service, but the most absolute non-intercourse with the West Indies will not prevent, at times, the spread of yellow fever in this country. The one fact of which we are sure is that the thorough cleansing and draining of our cities will take away from the disease its worst features, and will probably check its epidemic influence." He gives an interesting account of an epidemic at Newbern, in 1864, of which he says, "So sure were we of its non-contagious character that dozens of yellow fever patients from Newbern were admitted to the Morehead City General Hospital, and placed indiscriminately in the wards with other patients, yet in no single instance did any patient or attendant take the disease. Nor could any proof be found of the disease having been imported. Newbern is situated forty miles inland, on a river at that time strictly guarded by gunboats, and was under such rigid martial law, it seems impossible any infected person or thing could have been brought there without our knowledge. Every effort was made to trace any possible source of importation, but always without success. Of the twenty-two medical officers, all Northern men, who were with me during that epidemic, eleven died of the fever, but all the others, when the epidemic was over, joined me in the report that it was of *local origin*." In speaking of the report of the yellow fever commission that in a non-intercourse quarantine lies our only safety from yellow fever, and of their statement that towns which, like Natchez, Miss., shut themselves in and held no intercourse with the outside world escaped the pestilence, while it was spreading all around them, and that the same held good at some farm-houses, where the head of the family sat all day long, with a shot-gun, on the porch, and allowed no one to come through his gates, Dr. Hand shows the incompleteness of their investigations in stating the well-known fact that other observers, men careful and calm in the face of a great danger, say "this same immunity existed at Huntsville, Ala., and other towns, where no barbarous ordinance kept out the sick and weary refugees from infected districts;" also, that at many farm-houses where all were welcomed, and where many sickened and died of yellow fever, there was no spread of the disease to members of the household.

The report closes with carefully prepared statistical papers on the meteorology of Minnesota for 1878 by Dr. Leonard, and on the health of pupils in public schools by Dr. Hewitt, secretary of the board, which our space, unfortunately, compels us to pass over without more extended notice.

MEDICAL NOTES.

— The present number closes the one hundredth volume of the JOURNAL. The prospect never has been brighter during its long period of existence than to-day. The present volume is much larger than any of its predecessors, and each month additional space is given to meet the greatly increasing quantity of material. The editorial staff is carefully organized and fully prepared to meet the demands of the greater sphere of usefulness which is opening before us. The publishers evince a most liberal spirit, being ready to second the efforts of the editor, and we hope soon to make further important changes which will add to the value of the JOURNAL. We trust our efforts will meet the approval and support of the medical profession.

— In some parts of Germany, says the *Medical Press and Circular*, physicians are not permitted to dispense medicines when there is an apothecary in the place to do it for them. We learn from the *Allg. hom. Zeit.* that three homeopathic physicians were practicing in Regensburg, when an apothecary of the same belief came among them, and notified them to send their prescriptions to him. Two of them refused, and were brought before the court and fined about five dollars. The case was carried to a higher court, and the medicines (pellets) sent to the University of Erlangen for chemical analysis. The chemists of the university failed to find anything in them of a medicinal or poisonous nature, and so reported, whereupon the judge reversed the decision of the lower court, and declared that there was no law that prevented physicians from distributing sugar-plums (*Zuckerwaaren*) as freely as they chose.

PHILADELPHIA.

— In an obituary notice published in the last number of this journal, page 870, it was stated that Dr. Maury had tied the innominate artery, which is incorrect. He ligated, at the Jefferson Medical College, the right subclavian in its third portion, in a case of axillary aneurism after failure of systematic compression. The patient subsequently perished, with secondary hæmorrhage, on the tenth day. (Report published in *Philadelphia Medical Times*, vol. iii., page 404.) The innominate artery has never been tied in Philadelphia to the best of the writer's knowledge.

— By the will of the late Dr. George B. Wood, the University of Pennsylvania acquires the ownership of his pathological cabinet (already deposited with the institution, and in use for a number of years by the chair on theory and practice of medicine), and also his medical herbarium, a special bequest of five thousand dollars being added to establish and support a botanical garden and conservatory. He also directs that fifty thousand dollars shall be paid out of his estate to the trustees of the said institution for the endowment and support of chairs in the summer course of lectures, and seventy-five thousand dollars to build a clinical hospital, or as a fund for its maintenance. After devising to the College of Physicians fifteen thousand dollars and his medical library, he bequeathes the residue of his estate (excepting a few private bequests) also to the University of Pennsylvania for the said hospital for clinical lectures on medicine and surgery. Owing to the great depression in the value

of real estate, it is scarcely believed that the testator's wishes can be fully carried out, or that as much will be realized as he intended.

— By the will of Judge Asa Packer, it is reported that Jefferson College will receive a bequest of five thousand dollars.

CHICAGO.

— The State Board of Health, now in session in this city, has just promulgated its decision in the case of the Hahnemann Medical College, charged by some of its alumni with conferring diplomas improperly. The board had declared two years ago that it would not recognize the diplomas of colleges which conferred degrees without actual attendance upon two courses of lectures, said courses to be at least six months apart. It was proven that in at least two instances the offending college had violated this rule, but there were, so it is said, extenuating circumstances, and as the faculty promised they would not do anything wrong again, and protested that they had not meant to be naughty at all, it was agreed simply to declare that the two bad diplomas would not be recognized if they were presented (which they have not been, nor would be), and to administer a very mild rebuke to the college for its lack of care in the conduct of its business.

ST. LOUIS.

— Dr. Walter Wyman, who for some three years has had charge of the marine hospital at St. Louis, has been ordered to Cincinnati, to take charge of the marine hospital at that place. The position which he vacates will be filled by Dr. H. W. Sawtelle, from Norfolk, Va.

— The Missouri State Dental Association convened June 17th at Sweet Springs, Mo. Dr. A. H. Fuller, of St. Louis, presided.

SHORT COMMUNICATIONS.

IN-GROWN TOE NAIL.

MR. EDITOR, — A friend has called my attention to Dr. McCluer's letter in your *JOURNAL* of the 12th inst.

It is really amusing to note how great a stir a small matter may sometimes create. At first the suggestion was ignored as of little or no account; then, again, there was nothing new about it; now that it appears effective everybody claims it for himself, his friend, or some one else. Never mind, if, in the interest of patients, it be acted upon, — for there is satisfactory evidence that it is a good thing.

In point of fact, however, the operation was performed by me several years before the discovery of the anæsthetic power of ether; in the first instance to avoid repetition of evulsion in an aggravated case where that "barbarous practice" (Gross) had been attended with excruciating pain and followed by severe symptoms, without success. A plan to meet the case was then reasoned out, and, seeming philosophical, was resorted to, to remove the disease and enough of the adjacent healthy flesh to prevent, through the contraction of the cicatrix, its return. The scheme, wholly my own and untried so far as I know, promised well. The experiment, for such it then was, would require but an instant, — a great point in those days, — one stroke of the knife, and would be over almost before the patient had time to utter a single groan. It was tried, and succeeded.

The operation was repeated in other cases, from that time to this, with satisfaction to all concerned. As occasion offered the method was described to other practitioners and to

local societies, and was noticed in 1866 in the printed proceedings of one where it had been incidentally alluded to in connection with another matter. Possibly it was published before. I have a record of a case in 1851, where a second evulsion had previously proved unsuccessful. The paper published in January, 1873, was a hurried-up restatement to appease the JOURNAL.

There is perhaps no reason why my operation might not have been known in Holliston even before the ether discovery, as it was here, it being no secret; nor any, that I know of, why his may not have originated with Dr. McCluer in 1853-4, as again much later with Dr. I. M. Hamilton, of Monmouth, Ill. Both these gentlemen, however, were antedated by Mr. Stilwell. They did not publish until 1877, and, after all, without rationale, and seem to take to unnecessarily complicated and prolonged methods.

Originality or priority is of less consequence than usefulness, and not worth contention. More than one invention has had many claimants. There are scores of unsatisfactory operations for the disease in question. Let this operation have a fair trial, according to the principles advanced for it; that is the main thing.

Respectfully yours,

B. E. COTTING.

REPORTED MORTALITY FOR THE WEEK ENDING JUNE 14, 1879.

Cities.	Popula- tion estimated for July, 1879.	Reported Deaths in each.	Annual Death-Rate per 1000 during the Week.	Percentage of total Deaths from					
				The Princip- al "Zymot- ic" Diseases.	Diarrhoeal Diseases.	Pneumo- nia.	Diphtheria and Croup.	Scarlet Fe- ver.	
New York.....	1,085,000	441	21.19	22.22	6.35	6.80	3.40	5.44	
Philadelphia.....	—	275	—	14.91	3.64	—	2.18	4.36	
Brooklyn.....	564,400	154	14.23	15.59	5.84	3.24	4.55	—	
Chicago.....	—	120	—	20.83	8.33	3.33	5.83	3.33	
St. Louis.....	—	161	—	25.16	19.87	2.65	1.32	—	
Baltimore.....	365,000	145	20.71	24.83	15.17	5.52	6.21	2.07	
Boston.....	380,000	117	16.94	16.24	1.71	2.56	9.40	.85	
New Orleans.....	—	105	—	16.19	11.43	3.81	—	—	
Cincinnati.....	—	95	—	29.47	13.68	3.16	2.11	10.63	
District of Columbia.....	160,000	112	36.50	26.79	23.21	8.04	—	.89	
Cleveland.....	—	—	—	—	—	—	—	—	
Pittsburgh.....	—	46	—	26.09	2.17	4.34	10.87	—	
Buffalo.....	—	—	—	—	—	—	—	—	
Milwaukee.....	—	33	—	21.21	3.03	6.06	6.06	3.03	
Providence.....	101,000	33	17.04	21.21	—	6.06	12.12	—	
New Haven.....	60,000	20	17.38	10.00	10.00	5.00	—	—	
Charleston.....	57,000	32	29.27	21.88	15.62	—	3.12	—	
Nashville.....	27,000	13	25.11	30.77	23.07	7.69	—	—	
Lowell.....	53,300	10	9.78	30.00	—	—	10.00	—	
Worcester.....	52,500	9	8.94	22.22	—	—	—	—	
Cambridge.....	51,400	15	15.21	26.67	—	6.67	6.67	13.33	
Fall River.....	48,500	22	23.65	27.27	—	—	—	22.73	
Lawrence.....	38,200	9	13.81	—	—	—	—	—	
Lynn.....	34,000	18	27.61	38.89	5.55	16.67	22.22	—	
Springfield.....	31,500	9	14.30	22.22	—	—	22.22	—	
New Bedford.....	27,000	8	15.45	—	—	—	—	—	
Balem.....	26,400	11	21.73	9.09	—	—	—	—	
Somerville.....	23,350	3	6.70	—	—	33.33	—	—	
Chelsea.....	20,800	6	15.04	—	—	16.67	—	—	
Taunton.....	20,200	—	—	—	—	—	—	—	
Holyoke.....	18,200	6	17.19	33.33	—	—	16.67	—	
Gloucester.....	17,100	3	9.15	—	—	—	—	—	
Newton.....	17,100	7	21.24	28.57	—	—	28.57	—	
Haverhill.....	15,300	—	—	—	—	—	—	—	
Newburyport.....	13,500	8	30.90	12.50	—	12.50	—	—	
Pittsburg.....	12,500	5	20.86	20.00	—	—	20.00	—	

Two thousand and forty-one deaths were reported: 426 from the principal "zymotic" diseases, 286 from consumption, 175 from diarrhoeal diseases, 99 from pneumonia, 83 from diphtheria and croup, 63 from scarlet fever, 40 from bronchitis, 34 from typhoid fever, 25 from whooping-cough, 13 from measles, 11 from erysipelas, eight from cerebro-spinal meningitis, five from malarial fevers, five from small-pox, four from trismus nascentium, one from pleurisy. From *bronchitis*, 19 deaths were reported in New York, five in Brooklyn, three in Chicago and Pittsburgh, two in St. Louis, one in Boston, New Orleans, District of Colum-

bia, Milwaukee, Providence, New Haven, Cambridge, and Salem. From *typhoid fever*, 12 in Philadelphia, four in New York and Chicago, two in District of Columbia and Providence, one in Brooklyn, St. Louis, Baltimore, Boston, New Orleans, Cincinnati, Pittsburgh, Milwaukee, Worcester, and Salem. From *whooping-cough*, seven in New York, four in Brooklyn, three in Pittsburgh, two in Boston, Cincinnati, and Lynn, one in St. Louis, District of Columbia, Milwaukee, Providence, and Cambridge. From *measles*, six in New York, two in St. Louis and Pittsburgh, one in Brooklyn, Baltimore, and Lowell. From *erysipelas*, two in New York and Boston, one in Philadelphia, Brooklyn, St. Louis, Milwaukee, Charleston, Nashville, and Lowell. From *cerebro-spinal meningitis*, three in New York, one in St. Louis, Worcester, Fall River, Holyoke, and Newburyport. From *malarial fevers*, four in New York and New Orleans, one in District of Columbia. From *small-pox*, five in New York. From *trismus nascentium*, two in Charleston, one in District of Columbia and Baltimore. From *pleurisy*, one in Chicago.

Allowing for Cleveland and Buffalo, not reported, the deaths from bronchitis, diphtheria and croup, and whooping-cough show no noteworthy change; from scarlet fever and cerebro-spinal meningitis the decrease of the past two weeks continues; from measles and erysipelas there is an increase over the previous two weeks; in the last month the progressive weekly increase from typhoid fever has been moderate, from the total of "zymotic" diseases and diarrhoea very great; pneumonia and consumption are becoming less fatal again; small-pox is reported only in New York; the total mortality for the week shows a slight increase. In seventeen of the nineteen cities of Massachusetts, with an estimated population of 844,555, the mortality from pneumonia and diarrhoea was less than for the previous week; no other noteworthy change.

The weather was generally variable, fair, and clear, and cool for the season; the meteorological record for the week in Boston (latitude 42° 41', longitude 71° 4') being as follows:—

Date.	Barom-eter.	Thermom-eter.			Relative Humidity.				Direction of Wind.			Velocity of Wind.			State of Weather. ¹			Rainfall.	
	Mean.	Mean.	Maximum.	Minimum.	7 A. M.	2 P. M.	9 P. M.	Mean.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	7 A. M.	2 P. M.	9 P. M.	Duration.	Amount in inches.
June 8	30.011	60	70	45	58	23	41	41	NW	NW	NW	8	20	6	C	C	C	—	—
" 9	29.994	62	66	49	58	55	48	54	NE	SE	N	4	9	6	C	C	C	—	—
" 10	29.906	64	81	55	77	59	81	72	S	SW	W	4	9	8	O	F	F	—	—
" 11	29.916	56	61	52	93	82	87	87	N	SE	S	6	8	10	O	O	O	—	.09
" 12	29.814	57	62	53	100	93	100	98	E	SE	SE	4	8	7	G	O	O	—	.02
" 13	29.775	65	76	60	83	60	39	61	N	E	NW	10	4	12	F	C	C	—	—
" 14	29.782	68	78	51	89	31	43	48	W	W	W	12	16	11	F	C	C	—	—
Week.	29.885	62	82	45				66	W			1323 miles.						4.9	.11

¹ O., cloudy; C., clear; F., fair; G., fog; H., hazy; S., smoky; R., rain; T., threatening.

For the week ending May 24th, in 149 German cities and towns, with an estimated population of 7,537,346, the death-rate was 29.1, an increase of 0.7 over the previous week, indicating a marked increase in deaths from all causes, and from acute diseases of the pulmonary organs, diphtheria and croup, puerperal fever, typhus fever, and measles; no deaths were reported from small-pox; the other prominent diseases remained without noteworthy change. Four thousand two hundred and eleven deaths were reported: 585 from consumption, 565 from acute diseases of the respiratory organs, 194 from diarrhoeal diseases, 146 from diphtheria and croup, 66 from typhoid fever, 60 from scarlet fever, 53 from measles, 46 from whooping-cough, 33 from puerperal fever, 12 from typhus fever. The death-rates ranged from 15 in Mayence to 47.7 in Munich; Königsberg 24.7; Dantzie 23.3; Breslau 35.1; Dresden 24.7; Cassel 30.3; Berlin 26.1; Leipsic 21.8; Hamburg 32.0; Hanover 27.0; Bremen 32.9; Cologne 30.1; Frankfort-on-the-Main 20.9; Darmstadt 20.8. Also for the same week, Vienna 32.2; Prague 35.5; Trieste 29.6; Geneva 22.4; Paris 24.8; Christiania, 14.3.

For the week ending May 31st, in the 20 English cities and towns having an estimated population of 7,383,999, the death-rate was 20.5, a decrease of 0.9 from the previous week, showing a marked decline in pulmonary diseases, whooping-cough, fevers, and especially in small-pox; diarrhoeal diseases remained about the same; diphtheria showed a slight, scarlet fever a moderate, and measles a very great increase. Two thousand nine hundred and three deaths were reported: 283 from diseases of the respiratory organs, 106 from measles, 91 from whooping-cough, 89 from scarlet fever, 35 from diarrhoea, 23 from fever, eight from small-pox (in London). The death-rates ranged from 14.8 in Brighton to 27.7 in Newcastle-on-Tyne; London 20.6; Portsmouth 16.2; Plymouth 15.4; Bristol 16.9; Birmingham 18.8; Liverpool 22.6; Manchester 24.4; Leeds 17.6. In Edinburgh the rate was 25; in Glasgow 23. In Dublin small-pox showed again a considerable increase.

The international board of health in Constantinople have modified their quarantine regulations by exclusion of rags, old clothes, soiled under-clothing and bedding, and by holding vessels from suspected ports only long enough for medical inspection and, if deemed necessary, disinfection.

CIRCULAR CONCERNING THE PHYSICAL EXAMINATION OF SEAMEN OF THE MERCANTILE MARINE.

TREASURY DEPARTMENT,
Office Supervising Surgeon-General U. S. Marine-Hospital Service, }
WASHINGTON, D. C., June 11, 1879.

To Medical Officers of the Marine-Hospital Service, and others whom it may concern:—

(1.) To insure such owners of American vessels as desire the services of sound and healthy seamen facilities for the proper physical examination of crews, at all ports where medical officers of the Marine-Hospital Service are stationed, such officers will, upon the application of any United States shipping commissioner, or of the master or owner of any vessel engaged in the foreign trade, or passenger steamer engaged in the coasting trade, examine physically any seaman or seamen, and give a certificate as to their fitness or otherwise.

(2.) A record will be kept of all examinations of seamen, and a transcript thereof forwarded quarterly to the surgeon-general of the Marine-Hospital Service.

(3.) In all cases of rejection the certificate will state explicitly, in English, the reason for such rejection.

(4.) The loss of an arm or leg, defective vision, color-blindness, epilepsy, mental unsoundness, hernia, piles, fistulæ, varicose veins, serious organic disease, habitual drunkenness, the existence of venereal disease, marked want of development, weakness of the body, or deformity should cause the rejection of any seaman desiring to ship.

(5.) No seaman will be examined for the purpose of giving such certificate except in the presence of a United States shipping commissioner, or the master, owner, or agent of the vessel on which the seaman is expected to be employed, and examinations will only be made at the Marine-Hospital Office.

(6.) The rejection of a seaman at one examination shall not debar him from subsequent examination in case he claims that the disease for which he was rejected has disappeared.

(7.) The provisions of this circular will also apply to enlisted persons in the revenue-marine, life-saving, coast-survey, and light-house services, and to persons desiring to enlist therein, upon the application of the proper officers of the respective services.

(8.) No fee will be charged by any medical officer for making the examination or certificate herein contemplated.

J. B. HAMILTON,

Surgeon-General U. S. Marine Hospital Service.

Approved: JOHN SHERMAN, *Secretary of the Treasury.*

THE GYNÆCOLOGICAL SOCIETY OF BOSTON. — The next regular meeting of the society will be held at the Medical Library Rooms, 19 Boylston Place, on the first Thursday of July, at two o'clock, P. M. The following papers are expected: Atresia Vaginæ, by W. S. Brown, M. D.; a paper (subject not announced) by E. L. White, M. D. The profession are invited.

HENRY M. FIELD, M. D., *Secretary.*

